Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-4 (Cancelled).

Claim 5 (Previously Presented): A method of establishing a trim and compensation scheme for a laser emitter in a fiber optic link where the laser emitter is selected from among a group of similar lasers, the method comprising:

a) providing data models that characterize laser performance for a group of lasers, the models being generated using laser performance data obtained from measurements of laser properties taken from a sample group of lasers taken from the group of lasers;

b) determining a base power level using information from the data models and a predetermined set of user specified performance parameters;

c) determining whether the base power level satisfies a set of pre-specified operating parameters;

if a laser having the determined base power level does not satisfy the set of pre-specified operating parameters, the user specified performance parameters are adjusted and the operations of b) and c) are repeated to determine a new base power level;

if a laser having the determined base power level does satisfy the set of pre-specified operating parameters, then process moves on to the next operation d); and

d) determining a relationship between temperature and associated current values that can be used to regulate laser performance over a range of temperature.

Claim 6 (Original): A method as in Claim 5 wherein the base power level is used together with slope efficiency measurements of a specific laser and user specified optical power range window (W) to determine average target power levels thereby determining a relationship between temperature and associated average target power levels that can be used to regulate laser performance over the range of temperatures.

Claim 7 (Original): A method as in Claim 5 wherein providing data models that characterize laser performance for a population of lasers include a model that describes a relationship

between slope efficiency and temperature and a model that describes a relationship between threshold current and temperature.

Claim 8 (Original): A method as in Claim 5 wherein determining a base power level b) includes using a predetermined set of user specified performance parameters including at least one of: an initial power value (P_i); a power range window (W); a temperature range; a power adjustment coefficient (PAC); a modulation current adjustment coefficient ($I_{mod\ adj}$); an extinction ratio (ER).

Claim 9 (Original): A method as in Claim 5 wherein determining whether the base power level satisfies a set of pre-specified operating parameters includes determining whether the base power level satisfies extinction ratio (ER) conditions.

Claim 10 (Original): A method as in Claim 5 wherein determining whether the base power level satisfies a set of pre-specified operating parameters includes determining whether the base power level satisfies extinction ratio (ER) conditions at each temperature in a range of temperatures.

Claim 11 (Original): A method as in Claim 5 wherein determining whether the base power level satisfies a set of pre-specified operating parameters includes determining whether the base power level satisfies at least one of the operating parameter conditions at each temperature in a range of temperatures wherein the at least one operating parameter condition is selected from among: a maximum value for I_1, a maximum value for average current (I_{avg}), and a minimum I_{offset} value.

Claim 12 (Original): A method as in Claim 6 wherein generating a table of temperatures and associated current values includes generating a table associating a modulation current (I_{mod}) with a temperature for each temperature in a range of temperatures.

Claim 13 (Original): A method as in Claim 5 wherein b) determining a base power level includes:

i) determining modulation current values associated with a lowest temperature in a range of temperatures;

ii) determining modulation current values associated with a highest temperature in the range of temperatures;

iii) determining logical “1” current values associated wherein the logical “1” current values are associated with the with a highest temperature in the range of temperatures; and

iv) determining the base power level using information associated with: the determination of modulation current values in i); the determination of modulation current values in ii); and the determination of the logical “1” current values in iii).

Claim 14 (Original): A method as in Claim 13 wherein determining a modulation current values associated with a lowest temperature in a range of temperatures includes:

determining best case slope efficiency values taking in to account error margin and coupling efficiency; and

calculating modulation current value associated with a lowest temperature in the range of temperatures using the best case slope efficiency values.

Claim 15 (Original): A method as in Claim 13 wherein determining a base power level includes:

determining logical “0” current values;

determining offset current values;

using the offset current values and user specified performance parameters to determine a base power level.

Claim 16 (Original): A method as in Claim 15 wherein determining a base power level includes:

determining logical “0” current values by using the logical “1” current values determined at the highest temperature in the range of temperatures and using corresponding modulation current values determined at the highest temperature in the range of temperatures;

determining offset current values by subtracting the logical “0” current values from a corresponding threshold current value determined from a data model;

using a minimum offset current values and other user specified performance parameters to determine the base power level.

Claim 17 (Original): A method as in Claim 5 further including the further operations of:

e) trimming a specific laser emitter in a optical link using the base power level together with slope efficiency measurements of the specific laser over a range of temperatures to a determine target average power level for each temperature in the range of temperatures thereby defining a relationship between temperature and the associated target average power levels that can be used to regulate laser performance over the range of temperatures;

and

f) compensating for the effects of temperature by using the relationship between temperature and associated current and associated target average power values to regulate the laser emitter performance as temperature changes.

Claim 18 (Original): An optical link including a laser emitter in optical communication with an optical fiber wherein the optical link implements the trim and compensation scheme described in Claim 17.

Claim 19 (Original): The optical link as in Claim 18 wherein implementing the trim and compensation scheme comprises:

detecting optical power produced by the laser emitter; and

wherein compensating for the effects of temperature using the relationship between temperature and associated current and associated target average power values further includes using the detected optical power to regulate the laser emitter performance.

Claims 20-33 (Cancelled).

Claim 34 (Previously Presented): A laser emitter device suitable for coupling with an optical fiber in a fiber optic link, the emitter device comprising:

semiconductor laser emitter;

temperature sensor for detecting the temperature of the semiconductor laser emitter and producing an sensor output signal associated with the detected temperature;

monitor element that detects the optical power level produced by the semiconductor laser emitter and generates an associated monitor output signal;

look-up table having stored values for current information associated with temperature wherein the look-up table includes a listing of temperature values and zero bias current (I_0) values associated with the temperature values;

laser driver circuitry for receiving temperature dependent current information from the table and using said current information to provide a driving current to the semiconductor laser emitter so that the laser emits an optical signal having a desired optical power;

operational power circuitry for determining a suitable qualified optical power level at each temperature and generating an associated operational power output signal; and

temperature compensation circuitry that receives the monitor output signal and receives the operational power output signal and determines whether a modulation current provided to the laser is to be adjusted to accommodate changing temperature conditions.